Frank Jossi, *St. Paul Legal Ledger*

Coalition wants the CCLRT to be a national model for integrating transportation with renewable and efficient energy

Behind the many headlines the Central Corridor LRT project has generated, a bevy of state and local organizations has collaborated to integrate renewable and efficient energy issues into the corridor's ongoing story.

For example, the Central Corridor Sustainability Work Group imagines University Avenue as a street of buildings reconditioned to maximize energy efficiency because they'll be warmed by excess heat collected from the Rock Tenn Company and redistributed through a new system to be constructed in conjunction with light rail's development.

The group has branded its effort "The Energy Innovation Corridor" (EIC) and begun to conceive of University Avenue as a street of energy-efficient buildings-some topped with solar thermal or photovoltaic panels-and parking lots where drivers can recharge their electric vehicles.

The group sees an opportunity to test out new smart-grid technologies for managing power loads along the 11.5-mile Central Corridor LRT (CCLRT) that will connect the downtowns of Minneapolis and St. Paul.

John Marshall, Xcel's manager of community and local government relations and the group's facilitator, says four areas were chosen for focus: renewable energy, energy efficiency, smart technology and vehicle electrification.

Planning for the energy needs of the future along the corridor has to take place now, he says, because of the unique opportunity Minneapolis and St. Paul have to install some of the new technologies below street level as the avenue is torn up in preparation for the nearly $1 billion CCLRT.

"We're trying to combine improvements in energy infrastructure at the same time we're doing improvements in the transportation infrastructure," adds William Glahn, director of the Office of Energy Security in the Minnesota Department of Commerce.

"Along the way we're trying to improve the energy efficiency of the whole area. We think it's going to be an example of the sorts of things you can do when you get everyone at the table working together."

The organization is composed of representatives of the cities of Minneapolis and St. Paul, Xcel, CenterPoint Energy, two neighborhood energy groups, District Energy, the St. Paul Port Authority, Ramsey and Hennepin counties and a handful of others.

The EIC area, as defined by the group, is anything within a third of a mile of the track, an area that currently holds some 120,000 people and is expected to see population growth of 34 percent by 2030.

The EIC's stated goals include achieving a 50 percent reduction on energy efficiency over the state's own mandates (enough to power 7,100 homes) and producing 9.5 GWh of renewable energy (mainly through solar, equal to the energy required for 1,200 homes). Overall, the EIC wants to reduce carbon emissions by 95 million pounds in the corridor.

As Marshall points out, the EIC has no budget but does have a website and a pool of members willing to go after federal, state and local grants.

So has the EIC achieved anything? As it turns out, yes, says Xcel account management director Greg Palmer.

Hennepin County is working with Xcel to reduce its energy use and the Cedar Riverside apartments-six buildings, 1,300 units-agreed to having energy-efficiency features introduced through a partnership with CenterPoint, Minneapolis and the Minnesota Housing Finance

Agency.

The University of Minnesota is working with Xcel on "an aggressive" building re-commissioning program, a process that works to reduce heating, cooling and lighting costs, says Palmer, a member of the work group.

Xcel started a "Solar Rewards" program to grow the number of solar installations on homes and businesses, a program that will be heavily promoted in the corridor, he says. Minneapolis and St. Paul are getting $3 million from the federal government for creation of the local "Solar in the Cities" program.

Anne Hunt, St. Paul's environmental policy coordinator, says District Energy will spend $1 million of Solar in the Cities grant money to build a 1 MW (megawatt) solar thermal installation-the largest solar to be built in the state-on the St. Paul RiverCentre to provide warm water to the facility, she says.

Another 200 KW photovoltaic solar installation is planned for the Xcel Center. The Spruce Tree Centre built a 37KW solar installation in 2009 that represents perhaps the first solar investment on the corridor, she says, predicting that 90 percent of the Solar in the Cities money will be deployed in the EIC.

Over the past year, the Spruce Tree Centre's photovoltaic panels-paid in part through a $250,000 grant from Xcel-have provided 2.4 percent of its electric energy needs, "outperforming the theoretical model" initially put together by the team that installed the project, says Jason Sklar, commercial property area manager for MetroPlains LLC, the building's owner.

Spruce Tree has also gone through two lighting retrofits to change over all floors to fluorescent bulbs, and Sklar plans to try out energy efficient-and expensive-LED lights within the next year at Spruce Tree or another MetroPlains building at 1919 University Avenue.

"We're a green building that wants to be green," Sklar says. "We're happy to be a partner of the EIC."

A new Port Authority loan program called Trillion BTU assists businesses in getting money for studies to reduce energy use and to pay for new equipment that might be required to make that a reality.

Finally, the EIC is closing in on "developing a deployment of electric vehicles and some electric charging infrastructure in the corridor," Palmer says.

The corridor will also feature smart-grid technology, which Xcel first rolled out in Boulder. The Colorado plan mainly focused on changing customer behavior, while the EIC smart-grid approach will be behind-the-scenes and manage energy with little customer input, according to Palmer.

Xcel and EIC did not get a $7 million federal grant for a large solar project involving battery technology in Minneapolis, but it still plans to install smart-grid capacitors.

Though the corridor mainly consists of commercial and industrial buildings, the EIC has a program for homeowners called "Home Energy Squad."

Led by the Neighborhood Energy Connection in St. Paul and the Center for Energy and Environment in Minneapolis, the program's experts come to homes and businesses to change out light bulbs and showerheads, check thermostats, provide weather stripping and suggest approaches to energy reduction.

While Xcel works to reduce energy use, District Energy has focused on providing an alternative to current heating and cooling sources, says Nina Axelson, director of customer and community relations.

She sees it as District Energy's primary contribution to the EIC.

Currently, District Energy provides heating from a wood-burning plant to 185 buildings in downtown St. Paul and would like to extend its reach by installing a heat-recovery-capture system at Rock Tenn, Axelson says.

Such captured heat would then be sold as a heating source to University Avenue customers; it would flow through a system running underneath the street.

While the street is opened for construction, District Energy's plan calls for installing the "Integrated Energy Corridor." Any commercial, industrial or multi-family building could be a potential client, according to Axelson.

The cost of the piping alone will be $26.5 million, and the energy-capture equipment adds another $10 million. With construction costs included, the bill will be north of $50 million. By sharing in the utility relocation, District Energy will save 40 percent of the cost, she says, and construction could begin as soon as next spring.

Like much of the activity on the corridor, the Integration Corridor remains in search of dollars, but Axelson is confident that money will come from the federal government, foundations and state bonding.

U.S. Rep. Betty McCollum, D-St. Paul, and U.S. Rep. Jim Oberstar, D-Duluth, and both Minnesota's U.S. senators like the concept and have supported federal funding for it.

"I cannot see the Central Corridor happening and we don't do this-this is our one opportunity," Axelson says.

Hunt says her boss, Mayor Chris Coleman, believes the EIC will be a part of a national model for the integration of transportation and renewable energy. "The mayor's vision of this project was to do more than just a light rail system: We want to showcase these energy innovations," Hunt says.

"We want to be making existing buildings more energy efficient, building green buildings and doing state of the art smart-grid technology for the future of electric vehicles.

"We want to show in an urban, dense city you can also advance renewal energy," Hunt adds.

EIC Projects

Here are some projects along the Energy Innovation Corridor that fit under the banners of energy efficiency, renewable energy and LEED, as listed at www.energyinnovationcorridor.com.

Energy Efficiency

Carty Heights -Geothermal heating and cooling

Hennepin County Library - Green roof

Minneapolis City Hall & Hennepin County Courthouse - Green roof

Target Center - Vegetated roof

University of Minnesota - It All Adds Up campaign

Renewable Energy

Hennepin Energy Recovery Center - Waste-to-energy facility

Hennepin Island - Hydro plant

Royalston Maintenance Facility - Photovoltaic cells

Spruce Tree Centre - Solar panel system

St. Paul Cogeneration Biomass Plant

Leadership in Energy and Environmental Design (LEED®)

Accenture Tower - LEED Silver Certified

Ameriprise Financial Center - LEED Silver Certified

Bowman and Brooke - LEED-CI Certified

Butler Square - LEED-EB O&M Certified

Dunham Associates Office - LEED-CI Silver Certified

Saint Paul Western District Police Station- LEED Gold Certified

Securian's 401 Building - LEED-EB Certified

Spruce Tree Centre - LEED-EB Certified

University of Minnesota, TCF Bank Stadium - LEED Silver Certification

Wilder Center - LEED Gold Standard